ABSTRACT

A programmable conductor memory cell is read by a sense amplifier but without rewriting the contents of the memory cell. If the programmable contact memory cell has an access transistor, the access transistor is switched off to decouple the cell from the bit line after a predetermined amount of time. The predetermined amount of time is sufficiently long enough to permit the logical state of the cell to be transferred to the bit line and also sufficiently short to isolate the cell from the bit line before the sense amplifier operates. For programmable contact memory cells which do not utilize an access transistor, an isolation transistor may be placed in the bit line located between and serially connection the portion of the bit line from the sense amplifier to the isolation transistor and the portion of the bit line from the isolation transistor to the memory cell. The isolation transistor, normally conducting, is switched off after the predetermined time past the time the bit line begins to discharge through the programmable contact memory cell, thereby isolating the programmable contact memory cell from the sense amplifier before a sensing operation begins.